



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5, WPTD, ECAB, DE-9J
77 WEST JACKSON BOULEVARD
CHICAGO, ILLINOIS 60604**

RCRA COMPLIANCE EVALUATION INSPECTION REPORT

SITE NAME: NASA Glenn Research Center

EPA ID No.: OH0800005035

ADDRESS: 21000 Brookpark Road
Cleveland, OH 44135

DATE OF INSPECTION: February 15 and 16, 2006

EPA INSPECTOR: Bryan Gangwisch

PREPARED BY:

Bryan Gangwisch
Environmental Scientist
Compliance Section #2

Date Completed

ACCEPTED BY:

Paul Little, Chief
Compliance Section #2

Date

Purpose of Inspection

This inspection was an evaluation of NASA Glenn Research Center (NASA Glenn) and its compliance with hazardous waste regulations found at Ohio Administrative Code (OAC) and the Code of Federal Regulations (CFR). I performed the inspection with Neil Wasilk of the Ohio Environmental Protection Agency (OEPA). The inspection was a Federal lead RCRA Compliance Evaluation Inspection (CEI).

Participants

| | |
|---|------------|
| Priscilla A. Mobley, Chief, Environmental Management Branch | NASA Glenn |
| Dan Papcke, Primary Emergency Coordinator | NASA Glenn |
| Michael J. Bajorek, Hazardous Waste Operations Manager | SAIC |
| Joseph R. Trapp, Environmental Specialist | SAIC |
| Bryan Gangwisch, Environmental Scientist | U.S. EPA |
| Neil Wasilk, Environmental Specialist | OEPA |

Introduction

The inspectors arrived at the site at approximately 9:00 AM. We introduced ourselves, presented our inspector credentials and identification, and described the purpose of the inspection and the process by which we intended to conduct the inspection. Mr. Bajorek provided us with a verbal description of the site. Mr. Bajorek and Mr. Trapp led the tour throughout the facility and then provided us with the records we requested for review.

Site Description

NASA Glenn was operating as a large quantity generator at the time of the inspection according to Mr. Bajorek and a U.S. EPA database. The facility was built in the late 1940's. There are approximately 4,000 total employees that work 3 shifts, however, the bulk of the employees work on day shift. The research and testing operations currently at this facility consist mainly of space and aeronautics, microgravity, wind and icing tunnels, and lasers.

In January of 2006, a conduit fire broke out in NASA Glenn's 34KVA electrical tunnel. The piping in the tunnel protecting the conduit was lead cased. A heavy rain event soon after the day of the fire caused the storm drain to discharge some soot from the tunnel to a nearby creek. A sheen was reported on the creek and subsequent soil and water samples were taken. U.S. EPA Region 5 was immediately notified of this CERCLA reportable spill and the contact personnel for this event are Brad Stimple and Joseph Fredle out of the Westlake Region 5 Superfund Office. The TCLP analysis of the samples determined that cadmium was detected at 1.7 mg/L,

and the regulatory limit is 1.0. ChemTron, Inc., out of Avon will help coordinate the cleanup response that has been ongoing.

Building 16, which is where ion propulsion testing use to occur back in the 1960's and 1970's, has been rehabbed and abated for mercury.

There were approximately 19 hazardous waste storage areas located throughout NASA Glenn which covers about 350 acres. There were also approximately 30 satellite accumulation areas (SAA's) for hazardous waste management. SAIC is the on-site contractor that handles the physical management (labeling, marking, recordkeeping, etc.) of the hazardous waste at NASA Glenn. SAIC also makes determinations of generated waste on site and coordinates lab packs accordingly. The containers that are used to manage hazardous waste at NASA Glenn consists of tiny laboratory vials, 5-gallon containers, 30-gallon drums, DOT approved boxes, and 55-gallon drums. Hazardous waste gets shipped about every 60 days as stated by Mr. Bajorek.

The main waste streams generated at NASA Glenn consists of solvent related wastes from the space research operations. The hazardous waste codes associated with some of the main waste types that are generated at NASA Glenn consist of: F002, F003, F005, and D001-D010. Large amounts of used oil gets generated then screened for halogen content before being stored in two 5,000-gallon aboveground tanks outside of the Used Oil Room in Building 215. Spent fluorescent lamps, sodium lamps, and batteries get stored before being sent to Environmental Recycling, out of Bowling Green, OH, for recycling. NASA Glenn institutes three water systems including sanitary, storm, and IWS (industrial waste), and the water from the cooling towers are regulated by a NPDES permit. An oil/water separator is also on-site and the sludge generated from it is determined to be non-hazardous through TCLP analysis and the oil/wastewater is sent for fuel blending to Everclear, Inc., out of Youngstown, OH. All spent electronic devices such as monitors get picked up by Property Disposal Office (Logistics Management of NASA Glenn) to be recycled or sold.

Also, all records were centralized at Building 215, however, there was a hard copy of the contingency plan available at the Central Dispatch Area.

Site Tour

A physical walk-through of the facilities was conducted at this time. We started at Building 215, which contains the largest hazardous waste storage area at NASA Glenn, in the Transient Storage Room which consisted of product cylinder bottles. The Flammable Gas Storage Room also consisted of product cylinder bottles and this room was built to NFPA code and it is a blast room. The fire extinguishers in these rooms are inspected regularly.

Also, in Building 215, at the Inside Storage Room, there was product oil in a metal containment shed (haz-bin). In the middle of Building 215, there was a large system of shelves that contained spill supplies, various pumps, and decontamination equipment. Near the shelves of spill supplies, in the central storage location, were two pallets that contained seven 55-gallon drums

and three 5-gallon containers that contained metal processing and metals hazardous waste. Of the seven 55-gallon drums, four of them contained EDM filters, were labeled as "Hazardous Waste", were dated 12/30/05, and were closed at this time. The other three 55-gallon drums contained metals and acid waste, were labeled as D002 waste and "Hazardous Waste", were dated 11/30/05, and were closed at this time. The three 5-gallon containers also contained metal processing waste, were labeled as "Hazardous Waste", were dated 12/30/05, and were closed at this time.

Still at Building 215, in the central storage location, was a cubic-yard box of non-hazardous oily rags and five 5-gallon containers of hazardous waste on a pallet. Four of the five of the 5-gallon containers were labeled as D006, D007, and "Hazardous Waste", were dated 11/30/05, and were closed at this time. The other 5-gallon container was labeled as D009 and "Hazardous Waste", was dated 11/30/05, and was closed at this time.

The central storage area in building 215 also contained three cubic-yard boxes on pallets that were still being accumulated with non-hazardous oily rags. There were about sixteen boxes of contained used bulbs and lamps to be sorted and shipped for recycling that occurs about every nine months as stated by Mr. Bajorek. The boxes were labeled as "universal waste". At the Class II and III Oil Storage Area, there was product antifreeze and petroleum naphtha. At the Class II and III Used Oil Room, there were about forty 55-gallon drums of used oil in storage all labeled as "Used Oil", were closed at this time, and a picture was taken. Once generated, the used oil is brought to Building 215 and PID screened for halogen content and potential hazardous waste determination. When the used oil is determined to pass screening, it then is pumped into one of two 5,000-gallon aboveground used oil tanks that were located just outside of the Used Oil Room. The tanks were labeled as "Used Oil", and were situated in a secondary containment structure. Visual inspections are also conducted on the secondary containment area as stated by Mr. Bajorek. According to Mr. Bajorek, the used oil contained in both Tank 1 and Tank 2 gets shipped about twice per year.

Building 215 is sloped to drains that only go to two underground storage tanks for containment and a picture was taken of some of the drains.

A different hazardous waste storage area along the rear wall in Building 215 consisted of a hazbin with three compartments. The first compartment, 1C, consisted of one 5-gallon container labeled as epinephrine waste and "Hazardous Waste", was dated 11/30/05, and was closed at this time. The second compartment, 1B, consisted of one 5-gallon container of nitro-cellulose (Class IV) that was product. The third compartment, 1A, also contained product material.

Another hazardous waste storage area along the rear wall in Building 215 also consisted of a hazbin with three compartments. The first compartment, 2C, consisted of empty propane cylinders that were destined for the scrap yard according to Mr. Bajorek. The second compartment, 2B, consisted of product bases in containers. The third compartment, 2A, consisted of product acids

in containers. A different haz-bin 3A, right next to haz-bin 2, consisted of gasoline products. All the haz-bins had heat and CO2 detectors and phones were present.

At the Flammable Liquid Room, which is another hazardous waste storage area in Building 215, there were six 55-gallon drums of hazardous waste. Three of the six 55-gallon drums were labeled as spent solvent and "Hazardous Waste", were dated 11/30/05, and were closed at this time. One 55-gallon drum was labeled as spent solvent rags and "Hazardous Waste", was dated 11/30/05, and was closed at this time. One 55-gallon drum was labeled as spent aviation fuel and "Hazardous Waste", was dated 11/30/05, and was closed at this time. Also, one 55-gallon drum was labeled as organic solvents and "Hazardous Waste", was dated 11/30/05, and was closed at this time.

Outside, behind Building 215, there was one 40-cubic yard roll-off container that contained asbestos. The container was labeled and was closed at this time, and the management and subsequent shipment gets coordinated with the City of Cleveland Division of Air.

Back inside Building 215, there were four 55-gallon drums of substation wastewater and personal protective equipment from the fire project. The four 55-gallon drums were on pallets, were labeled as "Hazardous Waste", were dated 2/14/06, and were closed at this time.

Throughout Building 215, there were portable fire extinguishers, phones, spill control and decontamination equipment, pull-station alarms, adequate aisle space surrounding the hazardous waste in storage, two-part epoxy resistant floors, two eye wash stations, and sealed-off secondary containment.

At Building 51, there was a hazardous waste storage area that consisted of a haz-bin that included one 55-gallon drum that was labeled as "Used Oil", and one 5-gallon container labeled as spent solvent and "Hazardous Waste", was dated 2/8/06, and was closed at this time. Aisle space was sufficient, and there was a spill kit, fire extinguisher, sprinkler system, pull-alarm system, and phone in this haz-bin.

Building 83 is going to be demolished and soil sampling has been conducted according to Mr. Bajorek.

At Building 92, the Fuel House, there was a hazardous waste storage area that consisted of two 55-gallon drums and one 35-gallon drum. One of the two 55-gallon drums was labeled as "Used Oil", and the other 55-gallon drum was labeled as "Hazardous Waste", was dated 2/8/06, and was closed at this time. The 35-gallon drum was labeled as empty aerosol cans and "Hazardous Waste", was dated 2/8/06, and was closed at this time. Aisle space was sufficient, and there was a spill kit, fire extinguisher, eye wash station, phone, and drains that go to an oil/water separator in this haz-bin.

At Building 49, there was a hazardous waste storage area that consisted of one 55-gallon drum and one 5-gallon container. The 55-gallon drum was labeled as "Used Oil", and the 5-gallon container of spent solvent was labeled as "Hazardous Waste", was dated 2/8/06, and was closed at this time. There was a spill kit, fire extinguisher, phone, and aisle space was sufficient in this haz-bin.

At Building 50, there was a hazardous waste storage area that consisted of two 55-gallon drums and two 5-gallon containers. One of the two 55-gallon drums was labeled as "Used Oil", and the other 55-gallon drum was labeled as solvent soaked rags and "Hazardous Waste", was dated 2/8/06, and was closed at this time. One of the two 5-gallon containers was labeled as "Used Oil", and the other 5-gallon container was labeled as spent solvent and "Hazardous Waste", was dated 2/8/06, and was closed at this time. Aisle space was sufficient, and there was a spill kit, fire extinguisher, sprinkler, and phone in this haz-bin.

The Fabrication Shop/Machine Shop had two separate SAA's. The first SAA consisted of one 30-gallon container labeled as spent aerosol cans and "Hazardous Waste", and was closed at this time. The second SAA consisted of two 5-gallon containers labeled as spent solvent and "Hazardous Waste", and were closed at this time. There was also a paint booth present that operated periodically and used water and oil-based paints. The air filters in the booth are changed and disposed of as hazardous waste about once per year according to Mr. Bajorek. The main paint and organic filter is a cascading waterfall that gets recirculated until the water is too dirty to filter and absorb. The dirty water is at that time disposed of as hazardous waste.

At Building 110, there was a hazardous storage area that consisted of one 55-gallon drum and one 5-gallon container. The 55-gallon drum was labeled as "Used Oil", and the 5-gallon container was labeled as spent solvent and "Hazardous Waste", was dated 2/8/06, and was closed at this time. There was a spill kit, fire extinguisher, phone, pull-station alarm, and aisle space was sufficient in this haz-bin.

At Building 14, there was a hazardous storage area that consisted of four 55-gallon drums and one 30-gallon container. Two of the 55-gallon drums were labeled as "Used Oil", and the other two 55-gallon drums were labeled as spent solvent and "Hazardous Waste", were dated 2/8/06, and were closed at this time. The 30-gallon container was labeled as spent aerosol cans and "Hazardous Waste", was dated 2/8/06, and was closed at this time. There was a spill kit, fire extinguisher, phone, pull-station alarm, and aisle space was sufficient in this area. A picture was taken.

At Building 104, there were two separate SAA's. The first SAA consisted of three 55-gallon drums. Two of the three 55-gallon drums were labeled as used motor oil filters and "Used Oil", and the other 55-gallon drum was labeled as fuel filters and "Hazardous Waste", and was closed at this time. The second SAA consisted of two 55-gallon drums. One of the two 55-gallon drums was labeled as "Used Oil", and the other 55-gallon drum was labeled as "Hazardous Waste", and was closed at this time.

At approximately 3:50 PM, the site tour was completed, and the inspectors left the site at approximately 4:00 PM.

The next day on 2/16/06, the inspectors arrived at approximately 8:10 AM to review NASA Glenn's records.

Record Review

Manifests are kept on-site for at least 3 years. The most recent manifests show that all hazardous waste is sent to the following TSDF's: Chem Tron Corporation (OHD066060609) and US Liquids (MID980991566); and the following transporter: Enviroserve, Inc., (OHD987050564). According to Mr. Bajorek, the person who typically signed the manifests was Dan Papcke. An LDR notification was available for each manifest at the time of inspection.

The weekly documented inspections of hazardous waste storage containers and emergency equipment were reviewed by the inspectors. All the weeks were documented and no inspections from the last three years were missing. NASA Glenn/SAIC uses a site inspection PDA that ties in electronically with container management and emergency equipment questions that when finished are electronically downloaded into an inspection database. The weekly inspections were maintained for at least 3 years, and Mike Hovanic or Joe Trapp typically conducts the inspections as stated by Mr. Bajorek. Also, Call Henry, Inc., is the subcontractor within the Facilities Division that does inspections on the pull-system alarms, CO2 systems, and fire extinguishers.

Waste determinations are done through the Chemical Management System and Chem Tron or by generator knowledge.

Personnel training for all employees involved in the production/waste handling process has been taking place. The content of the hazardous waste training program included contingency plan implementation, the amount and type of training to be given to each employee, written job descriptions, documented annual training, and all the site-specific emergency procedure and equipment elements that are required. The training also covers all contractors that are employed at NASA Glenn. Training records for Mr. Hovanic, Mr. Bajorek, and Mr. Trapp (who is trained through Transportation Skills Programs, Inc.) were current and available for review at the time of this inspection. Dan Papcke was the primary emergency coordinator and his training was also current along with Rich Miller, who was the alternate emergency coordinator. The training is done in-house through SAIC and Joe Trapp does the training.

There was a contingency plan/environmental spill plan for the entire NASA Glenn complex. The plan included evacuation routes, emergency equipment lists and locations for spill kits but not for fire extinguishers and pull-alarm systems (emergency communication devices), emergency contacts, arrangements made with local authorities, and response procedures in dealing with explosions, fires, and releases of hazardous waste. Copies of the contingency plans have been sent to all local authorities. The list of personnel qualified to act as emergency

coordinators was out of date. R.L. Allen, Jr., and M.J. Blotzer were listed as emergency coordinators and were no longer in that capacity.

There were internal communications and alarm systems in place at the facility and all personnel qualified to respond in emergencies have been provided with NASA Glenn issued cell phones and are expected to be on call at all hours.

There were spill kit/carts on site along with the main haz-mat crib, and the fire extinguishers throughout the facility had been inspected regularly.

Closing Conference

We summarized the contingency plan issues identified during the inspection. The inspection concluded at approximately 12:15 PM.

Documents received during this inspection are as follows:

- None

Documents given to NASA Glenn during this inspection are as follows:

- U.S. EPA Small Business Resources handout (compliance assistance)
- Facility Questionnaire in response to Executive Order 13101, Section 6002 of RCRA

Documents received since the dates of this inspection (2/15/06 and 2/16/06) are as follows:

- None

A photo log is attached consisting of three (3) photos taken by U.S. EPA during the inspection.